Special Series

Costs and Coverage
Pressures Toward Health Care Reform

PHILIP R. LEE, MD; DENISE SOFFEL, PhD; *and* HAROLD S. LUFT, PhD, *San Francisco, California*

Signs of discontent with the health care system are growing. Calls for health care reform are largely motivated by the continued increase in health care costs and the large number of people without adequate health insurance. For the past 20 years, health care spending has risen at rates higher than the gross national product. As many as 35 million people are without health insurance. As proposals for health care reform are developed, it is useful to understand the roots of the cost problem. Causes of spiraling health care costs include "market failure" in the health care market, expansion in technology, excessive administrative costs, unnecessary care and defensive medicine, increased patient complexity, excess capacity within the health care system, and low productivity. Attempts to control costs, by the federal government for the Medicare program and then by the private sector, have to date been mostly unsuccessful. New proposals for health care reform are proliferating, and important changes in the health care system are likely.

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This paper is the first in a series on health care reform.

Early this year, as signs of discontent continued to build about the United States health care system, an experienced observer of the health policy process was led to remark, "There will be no more politics as usual" (E. B. Dowell, former Director of Governmental Affairs, Blue Cross of California, oral communication, April 1992). After years of neglecting issues related to health care, except for a limited interest in the acquired immunodeficiency syndrome (AIDS) epidemic, the media have suddenly turned their attention to this subject. In addition to national newspapers, in the past year *Time, Fortune, The National Journal,* and *Business Week* have run cover stories on the health care crisis. Public television produced a special program on health care, and major news programs, "60 Minutes" and the "MacNeil/Lehrer NewsHour," dedicated segments to this dilemma. Media activity increased rapidly throughout 1991, and issues concerning management of the health care system have shown the greatest increase in media activity (*IssueScan,* 4th quarter, 1991).

A survey conducted by Louis Harris and Associates in 1988 found that 89% of Americans wanted to see a dramatic change in the health care system: 29% thought that the health care system needs to be completely rebuilt, and an additional 60% thought that the system needs fundamental changes.[1] A poll conducted by *Time* and the Cable News Network found that 91% of Americans thought that the health care system needs fundamental change, and 75% of those surveyed said that costs are much higher than they should be (J. Castro, "Condition: Critical," *Time,* November 25, 1991, p 34). A poll in 1990 found only 10% of Americans satisfied with the current health care system, in contrast to 56% in Canada, 41% in West Germany, and 22% in Great Britain.[1]

The results of many of these polls were summarized in 1991 by Blendon and Donehue:

> Opinion polls indicate that support for a national health plan is at a 40-year high point and more than 10 national and statewide surveys conducted since 1989 indicate that between 60 and 72 percent of Americans are in favor of such a plan . . . . By some of these measures, the public's enthusiasm for the concept of a comprehensive program of national health insurance exceeds the level of support for Medicare in the year prior to its enactment. In fact, a recent Roper Organization survey indicates that 69 percent of all Americans surveyed would approve extending Medicare coverage to all citizens.[2(pp173-175)]

More recent polls indicate continuing discontent with the present system, particularly the high costs of care. In an exit poll after the Pennsylvania special senatorial election in November 1991, people were asked what they thought was the biggest problem with health care for themselves and their families; 77% of the voters responded that the biggest problem was cost. Voters in the New Hampshire primary cited health care and national health insurance as the second most important factor in deciding their votes—after the recession and concerns for the economy ("Health Reform Number Two Issue in New Hampshire," News Release, Henry J. Kaiser Family Foundation, Menlo Park, Calif, February 1992). The most recent Kaiser/Commonwealth Health Insurance Survey found that Americans are increasingly dissatisfied with their health care and with the health care system ("Survey Shows Widespread Public Concern About Health Insurance Coverage and Costs," News Release, Henry J. Kaiser Family Foundation, Menlo Park, Calif, April 1992) and that 60% of Americans think it is the responsibility of government to provide health insurance to all, compared with 34% who believe it is the responsibility of the private sector.

Clearly the public perceives a problem that stems from the high cost of health care, and they call for the federal government to engineer major reforms. Research by the Public Agenda Foundation, in association with the Gallup organization and the Employee Benefit Research Institute,[3]

From the Institute for Health Policy Studies, University of California, San Francisco, School of Medicine.

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Reprint requests to Philip R. Lee, MD, Professor of Social Medicine and Director, Institute for Health Policy Studies, UCSF School of Medicine, 1388 Sutter St, 11th Floor, San Francisco, CA 94109.

ABBREVIATIONS USED IN TEXT

AIDS = acquired immunodeficiency syndrome
GNP = gross national product
HCFA = Health Care Financing Administration

suggests that the public is particularly concerned about out-of-pocket costs. According to the Public Agenda Foundation, people attribute high costs to "unnecessary tests, overpaid doctors, wasteful hospitals, profiteering drug companies, and greedy malpractice lawyers."[3(p4)] Surveys have found that the great majority of the public thinks that spending on physician services is too high and that physicians are too interested in financial reward.[4]

The general public concern is that physician fees are too high, and, in fact, physicians' real earnings have increased considerably in the past decade. Average inflation-adjusted physician income grew by 24% from 1982 to 1989.[5] This increase was not spread equally across all specialties, however, with some experiencing only modest gains as others reaped dramatic increases. In areas like family practice and internal medicine, income levels have been relatively flat.

Although Medicare policy changes to control costs have been enacted by Congress since 1983, little interest has been shown for systemic reforms until recently. Only in the past year has the notion of a major federal role in cost containment for the private sector begun to attract serious attention. In recent years, more than 40 bills have been introduced in Congress, ranging from incremental changes in health insurance and malpractice reform to sweeping "top-down" reform. The three basic approaches before Congress are a market approach, a single-payer approach, and a "play or pay" approach.[6,7]

At the state level, discontent is also evident, particularly with reduced state revenues and climbing Medicaid expenditures.[8] Minnesota recently enacted a plan to cover the uninsured,[9] and more than 30 states are considering major health care reforms.

Physicians agree that there is a problem, although they tend to focus on the uninsured rather than on rising costs. Health care reform issues are beginning to attract attention within medicine. The American Medical Association, the American College of Physicians, and the American Academy of Family Practice all supported the Medicare fee schedule included as part of the 1989 Medicare physician payment reforms enacted by Congress. One of the first physician-authored health care reform proposals, set forth by the Physicians for a National Health Program, appeared in an article published in January 1989.[10] The landmark May 15, 1991, issue of the *Journal of the American Medical Association* and now a second special issue dedicated to health care reform proposals illustrate a broad, open approach, in contrast to the past when most proposals suggesting government intervention were rejected out of hand by physician organizations. Indeed, the American Medical Association has endorsed the idea of government-mandated private insurance coverage[11] and has hinted that it might support some form of overall cost containment. The California Medical Association qualified a proposition for the November 1992 ballot called Affordable Basic Care that would require employers to provide health insurance for their employees.[12] In September 1992 the American College of Physicians published their plan for systemwide reform in the organization and financing of health care.[13]

Factors Driving Reform—Rising Costs and the Uninsured

Growing calls for health care reform in the United States are largely the result of two factors: the continued increase in health care costs, which have been well above increases in gross national product (GNP) for most of the past 20 years, and the large number of uninsured and underinsured.[14] In addition, as costs increase, employer coverage is deteriorating. Millions of people will not change jobs for fear of losing their employment-based private health insurance. This is due in part to the erosion of risk-pooling and the increasing use of experience rating, the practice of pegging a group's insurance premiums to its historical use patterns. This practice is in contrast to community rating, which charges insurance premiums based on the experience of an entire community rather than a small group. Insecurity about changing health plans is further exacerbated by preexisting condition clauses that exclude or impose restrictions on coverage for health problems documented at the time of enrollment. Finally, it is a matter of increasing concern that the United States does not compare well with other industrial democracies in universal coverage, cost containment, and health status.

Rising Health Care Costs

The most important factor propelling health care reform in the United States is the cost of health care, both in absolute terms and in the rate of cost increases. A few figures tell the story. Measured in current dollars, health care spending in the United States between 1970 and 1990 rose at an annual rate of 11.6% whereas national income, as measured by the GNP, increased at an average annual rate of 8.8%.[5] As a result, the share of the GNP devoted to health care grew by more than half in 20 years: from 7.3% to 12.3%. The Commerce Department predicts that the share of the GNP devoted to health care will rise to 14% in 1992. The Health Care Financing Administration (HCFA) projects that health care will absorb more than 16% of the GNP by the year 2000.

The pluralistic nature of health care financing means that persons, families, insurers, employers, and government at all levels (federal, state, and local) are affected by high costs. Steuerle estimated that total US health care expenditures in fiscal year 1992 will be $768 billion, drawn from the following sources of financing: individuals (out of pocket), private health insurance (employer's share), Medicare, Medicaid, other public programs, federal tax subsidies, private health insurance (employee's share), other private sources, and state tax subsidies (Figure 1).[16]

In the end, it is families and individuals who bear the financial burden. In his report, Steuerle analyzes the cost to families in a manner that reveals the true cost of health care.[16] He estimates that the average expenditure per household is $8,000 per year. Of this, only about a third is paid directly by household members. The largest costs are indirect, particularly through taxes that finance public programs and reduced wages that are siphoned into insurance premiums paid by employers (Table 1).[16]

Spiraling costs are also endured by Medicare beneficiaries. Although Medicare is a major source of financial security for older Americans, the proportion of their income spent on health care is increasing. In 1972 they spent 10.6%

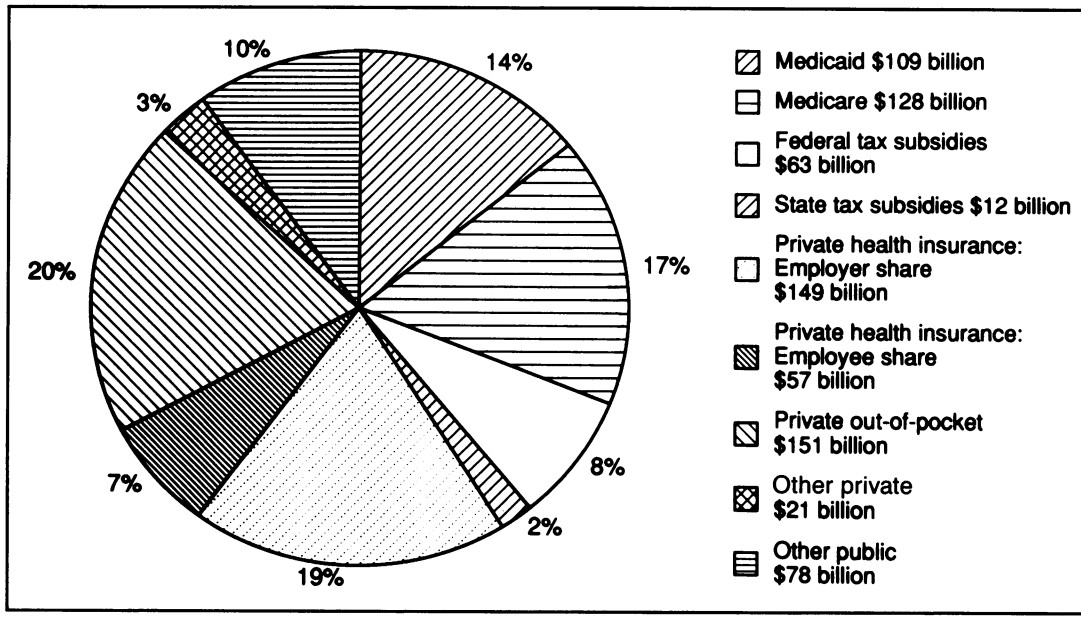

Figure 1.—The graph shows the estimated sources of financing for United States health care expenditures, fiscal year 1992 (adapted from Steuerle[16]).

of their income on health care. This rose to 16.2% in 1984 and 17.1% in 1991.[17] The bulk of the increase has been in Medi-Gap premiums and direct out-of-pocket costs—deductibles and coinsurance for private health insurance and Medicare Part A and Part B; balance bills and uncovered services, such as prescription drugs; and nursing home costs.

Health care is also taking a growing portion of federal funds. In 1970, spending on health constituted 7.1% of the federal budget, a share that rose to 13.4% in 1990. The Congressional Budget Office projects that health care will account for more than 20% of the federal budget by 1996.[18] Although federal health expenditures are projected to rise by 7.0% annually, Social Security expenditures are expected to rise by 2.2%, net interest on the debt 1.4%, and the percentages devoted to all other federal expenditures are expected to decline.[19]

Uninsured Americans

The second major factor stimulating a host of health care reform proposals is the growing population of uninsured persons. Most estimates place the number of Americans without public or private health insurance between 31 and 36 million.[20] The 1987 National Medical Care Expenditure Survey found that 18.5% of the population (47.8 million Americans) lacked health insurance for all or part of 1987. On any given day, between 34 and 36 million were uninsured, and 24.5 million were uninsured throughout the year.[14] Analysis of the March 1990 Current Population Survey found that 33.4 million people (13.6% of the population) had no health insurance (public or private) throughout 1989.[21] Thus, millions of people in this country lack access to even the most basic health services.

The 1987 survey found that of the uninsured population, 70% were employed or dependents of employed persons. Approximately 10% are unemployed persons and their dependents, and the remainder are nonworkers, such as students.[14]

The number of uninsured increased rapidly between 1979 and 1984, from 28.8 million in 1979 to 37.3 million in 1984.[14] The most notable factor in the rising number of unin-

TABLE 1.—*How US Households Pay for Health Care**

Estimated Costs, 1992	*Average per Household, $*	*Percent of GNP*	*Percent of Personal Income*
Paid indirectly			
Taxes			
Federal hospital insurance payroll tax	860	1.4	1.6
Other federal, state, and local†	3,070	4.9	5.8
Reduced wages (paid by employers)‡	1,580	2.5	3.0
Other§	190	0.3	0.4
Paid directly			
Personal contributions to private health insurance‖	590	0.9	1.1
Out-of-pocket payments	1,580	2.5	3.0
Premiums			
Federal supplemental medical insurance	130	0.2	0.2
Total	8,000	12.9	15.1

GNP = gross national product

*Adapted from Steuerle.[16]

†Includes taxes needed to finance direct government health spending out of general revenues, plus the amount of general taxes that must be raised to compensate for revenue lost due to special tax treatment of certain health-related income (about 26% of total).

‡Employer contributions for health insurance, less government tax subsidies.

§Nonpatient revenue for the health care industry, such as charitable donations, interest income, hospital parking, and gift shops.

‖Includes employee contributions to private group health insurance plans and individual policy premiums.

sured Americans was the recession of the early 1980s. From 1984 through 1989 the number of uninsured seems to have stabilized. It is not yet clear what effect the current recession has had on the number of uninsured persons. Unemployment is currently more than 7% nationwide (B. Holey, Bureau of Labor Statistics, US Department of Labor, oral communication, September 1992), and it is even higher in some regions, such as California, where it is 9.5%. Signs of an economic recovery are still faint.

The continuing realignment of the economy, with changes in the mix of industries and occupations, is also contributing to the rise in the number of uninsured. The volume of jobs in the manufacturing sector is declining as the service sector is growing. The manufacturing sector has a strong union tradition with generous employee benefits. Whereas 90% of persons working in manufacturing had health insurance in 1990,[21] employees in most other sectors of the economy did not receive health benefits at this level. Of those employed in agriculture 30% did not have health insurance, and of those in service sector jobs 25% did not.[21] Also, the erosion of Medicaid in many states has resulted in a growing number of poor without Medicaid eligibility. Where 65% of the poor were once eligible for Medicaid, the program now covers less than 40% of the population below poverty.[22]

Lack of public or private insurance coverage ranges from less than 10% in 13 states, including Hawaii, Massachusetts, Connecticut, Michigan, Wisconsin, and Iowa, to more than 20% in Texas, Louisiana, and New Mexico.[21] California has the largest number of uninsured, a figure that has climbed to 6 million.[23] Uninsured persons are found in disproportionate numbers among those 18 to 28 years of age, Hispanics and African Americans, those with low incomes, and those living in rural areas.[14]

A lack of insurance has several important consequences. It places a substantial financial burden on persons and families with relatively low incomes. High costs reduce access to care for appropriate services. Poor access to primary care is associated with increased health care costs and decreased health status.[24]

Factors Contributing to Rising Health Care Costs

As problems related to costs and the uninsured motivate policymakers to explore ways to improve or revamp the medical care system, assessments of various proposals must consider how they address these twin issues. As will be seen in subsequent articles in this series, most of the current crop of proposals offer some detail on how they will address the problem of insurance coverage. Specifics on how costs will be contained are less often available. To assess the plausibility of various approaches, it is helpful to examine first the causes of spiraling health care costs.

The rise in personal health care expenditures can be broken into four components: general inflation, as measured by the consumer price index; population growth; medical care price inflation above general inflation; and all other factors, including increases in volume and intensity of services. Whereas the components that are not controllable within the health care system—general inflation and population growth—accounted for about 55% of the increase in the past 20 years, medical care price inflation has accounted for 17% of the increase and the volume and intensity of services for approximately 28%.[25]

It is difficult to differentiate the effects of medical care inflation, quality improvements, and increased volume and intensity. This collection of components, however, is affected by a variety of factors, including,

- Market failure,
- Technology,
- Administrative costs,
- Unnecessary care and defensive medicine,
- Patient complexity,
- Excess capacity, and
- Productivity.[26]

Market Failure

Market failure is an economic term describing a situation in which normal marketplace behavior cannot be assumed to lead automatically to an efficient allocation of resources. In this context "failure" is a technical explanation of the common observation that medical care is different from other goods and services. Five factors contribute to market failure in the United States: Suppliers may influence demand, consumers are usually cost "unconscious" when using medical care, workers are shielded from the true costs of insurance, uncertainty in the services needed for treating individual patients leads to the predominance of fee-for-service reimbursement, and information is lacking on what works.

An inherent aspect of medical care, regardless of the organizational and economic system, is uncertainty at the outset concerning the need for and efficacy of specific treatments. Arrow's classic article on this issue laid the groundwork for the field of health economics.[27]

In the United States, the consumers' desire to insure against the risk of costly medical care led to the growth of private health insurance, both employment-based and self-purchased. The number of companies providing group health insurance has grown from only 37 such companies in 1942 to more than 1,500 companies today. Although about 100 companies provide coverage to 90% of the covered population, and an additional 250 companies provide most of the rest, hundreds of other companies provide some type of health coverage (H. Raymond, Health Insurance Association of America, oral communication, May 1992).

Fragmentation of the insurance market has several deleterious effects. First, because providers are reimbursed by many insurers, each company represents a small fraction of a physician's caseload. Thus, it is impossible for an individual carrier to collect valid information about a provider's quality and practice style. It also becomes infeasible to negotiate average payment rates for episodes of care as an alternative to fee-for-service reimbursement while protecting physicians from costs associated with treating patients with unusually complicated conditions. Second, competition among insurers for enrollees leads to fragmentation of the risk pool (those being insured) because of the voluntary nature of health insurance and the fact that more and more insurers use experience rating. Voluntary enrollment means that a given premium will be most attractive to those most in need of treatment. Because of this, insurers will seek to avoid high-risk enrollees.

Technology

Developments in technology—new drugs, devices, and procedures—play an important role in improving the quality and effectiveness of health care and in escalating costs. After pharmaceuticals are developed and approved as safe and ef-

fective for specific indications, their application may be broadened, and they may be used when they are only marginally effective or even ineffective. Diagnostic technologies such as endoscopy, computed tomographic scan, and magnetic resonance imaging may also be used initially for a limited number of indications, but gradually the application is broadened, and there may be misuse, overuse, and underuse.

During the past 30 years, faculty at the Institute for Health Policy Studies at the University of California, San Francisco,[28-30] and the Palo Alto (California) Medical Foundation,[31,32] as well as other investigators[33] have studied the effects of medical technology on costs. Studies in the 1960s strongly suggested that for most conditions it was "little ticket" items that contributed most to expenditure increases, and technology was not driving up costs. By the mid-1970s this began to shift, and studies in the 1980s and 1990s clearly indicate that "big ticket," high-technology items, such as coronary artery bypass grafting, are of growing importance.

The complex factors related to the development and diffusion of medical devices have recently been carefully analyzed by Foote,[34] who notes the federal policies, such as funding for research through the National Institutes of Health, that promoted their development, as well as those that may retard them, such as Food and Drug Administration regulation. The same is true for health care financing policies that may either promote (Medicare, Medicaid) or retard (HCFA hospital prospective payment) the diffusion of technology. In contrast to Canada and many European countries, which place far more restrictions on the deployment of new technologies, particularly big ticket items, there is little connection in the United States between policies that promote and those that retard this development and diffusion, and no overall policy is in place related to medical technology. Furthermore, in the United States there are few constraints on the ability of providers to offer new technologies, so it is commonly the case that excess capacity develops with attendant incentives to increase use.

Administrative Costs

Administrative costs have been the focus of considerable interest and complaint but not a large amount of careful research. These include the costs of claims processing to pay physician and hospital bills, marketing, enrollment, and eligibility determination, including risk profiling. A particularly difficult problem is posed for small businesses: health insurance premiums are higher because of administrative costs that can be as much as 35% greater than those for large employers with the same coverage.[14] In addition, in their effort to contain costs through constraining use, payers have developed extensive review and authorization programs, further adding to administrative costs. Not only are administrative costs high for third-party payers, but costs of administration must be borne by hospitals, nursing homes, physicians, and consumers.

It has been estimated that administrative costs account for about 25% of the $738 billion health care expenditures in 1991.[35] Estimated savings in administrative costs for various health care reform proposals range from $31 billion[36] to $67 billion[37] or even $100 billion for single-payer systems.[35]

Unnecessary Care and Defensive Medicine

Growing attention in recent years has been focused on the potential importance of unnecessary care, including defensive medicine, in rising health care costs.[3] Whereas some care may be deemed unnecessary or inappropriate on retrospective review, it is difficult to make such a judgment at the time the care is provided. The existence of uncertainty in clinical decision making has always been recognized, but it has long been thought to be a random occurrence with few economic or policy implications. Studies in the early 1970s, however, showed wide variation among adjacent communities in Vermont and other New England states in the population-based admission rates for such elective procedures as tonsillectomy and hysterectomy.[38,39] Later studies showed marked differences in patterns of use and the costs of care in Boston, Massachusetts, and New Haven, Connecticut,[40] with no apparent differences in mortality between the two cities. A major factor, in Wennberg's view, has been uncertainty about outcomes of care and the fact that practice styles and patterns of practice vary idiosyncratically from one community to another.[41] Additional evidence regarding inappropriate or unnecessary care has come from the work of Chassin and associates.[42,43] Their studies suggest that for some procedures the application to specific clinical situations may be inappropriate as much as a third of the time.

It is difficult to estimate the effect of malpractice on defensive medicine and the cost of health care. In a study reported in 1987, Reynolds and co-workers estimated that the costs of defensive medicine were more than 3.5 times the cost of malpractice insurance premium increases.[44] They estimated the component of physician cost related to professional liability, including defensive medicine, using two different methods and found these costs were about 15% of the total cost of physicians' services in 1984. Of these professional liability costs, $3 billion was spent on insurance premiums and $100 million on settling claims not covered by insurance. Practice changes prompted by the risk of claims account for the rest. A 1991 study estimated that between 1982 and 1989, about 1% per year has been added to expenditures for physician services as a result of the professional liability system. The authors concluded that 30% of professional liability costs went to the direct payment of malpractice premiums, whereas 70% was attributable to practicing defensive medicine.[45]

Patient Complexity

Patient complexity is recognized as a factor of importance in the cost of care, particularly for low-birth-weight infants; older persons with multiple chronic diseases and disabilities; patients infected with the human immunodeficiency virus or AIDS, particularly those with numerous infections, including drug-resistant tuberculosis; trauma patients with multiple injuries associated with the growing wave of violence; and patients requiring such major procedures as heart, lung, and liver transplants. It is evident to most clinicians that because of the rapid increase in ambulatory and hospital outpatient services,[46] patients are coming to the hospital with more complex and difficult problems. Although these factors are important clinically and affect increases in hospital costs, they are not a major factor in overall cost increases because the less complicated segment of patients is being treated in less costly settings.

Excess Capacity

The issue of excess capacity is yet to be seriously addressed by policymakers, but it is likely to become more and

more important. Excess capacity is evident in some areas, such as in the number of hospital beds and the availability of medical technologies. Statewide hospital occupancy rates in 1988 were as low as 49% in Alaska, 52% in Wyoming, and 55% in Louisiana, Nebraska, and Texas.[47] Nationwide, one in three hospital beds has been empty since 1985, as hospital occupancy rates have dropped below 65%. Recent work by Fisher and associates, using the techniques of small area analysis, estimated savings in Oregon of as much as $50 million if the hospital bed supply were reduced.[48]

The current supply of physicians is also in excess of what is needed, and there is certainly a maldistribution by specialty and geographic area. Most of the imbalance by medical specialty has resulted from a rapid growth in surgical specialties and medical subspecialties. A projection of the supply of physicians by specialty for 1990 showed shortages in the 5 specialties of child psychiatry, physical medicine, emergency medicine, preventive medicine, and psychiatry and an oversupply in 16, with cardiology, endocrinology, neurosurgery, and pulmonary showing the greatest surpluses.[49] More recently, both the Council of Graduate Medical Education[50] and the Bureau of Health Professions[51] reported a physician surplus, although persistent problems of maldistribution, both by specialty and by geography, continue to leave some areas underserved. Data on the distribution of physicians show extreme variations by geographic area. The federal government designates 2,143 areas as health professional shortage areas,[52] the major criterion being defined by physician-to-population ratios. Not everyone agrees with this assessment of the physician supply problem, however. Schwartz and colleagues, for example, suggest that the increasing supply of physicians is leading to an outward movement by specialists to smaller communities, narrowing the maldistribution problem.[53]

Physician supply has increased rapidly since the mid-1960s when federal and state policies were implemented to increase medical student enrollments and expand physician supply. Total, nonfederal patient care physicians per 100,000 population increased from 125 in 1965 to 193 in 1989. The United States now has more physicians per capita than almost all other nations. Exceptions include Israel, Belgium, West Germany, and the former Soviet Union.[54] It is expected that this number will continue to increase. This oversupply has important implications for health care costs. A study by Grumbach and Lee suggests that projected costs for physician services in the year 2000, given projections about physician supply, could be as much as $40 billion in additional costs.[55]

Schwartz and co-workers, however, argue that the demand for physician services will continue to expand rapidly because of the aging of the population, the development of new diseases, and the increasing array of technically sophisticated medical services. These trends, they argue, will lead to a shortage of physicians, not a surplus.[56]

Productivity

Assessing productivity in medical care is important, but conventional measures of productivity are inherently limited. Productivity is usually defined in terms of output per labor hour, and industry typically attempts to increase productivity by substituting new machinery for workers. The service and cognitive aspects of medical care make it difficult to achieve productivity increases in this manner, although some opportunities do exist. Changes ranging from laparoscopic surgical procedures to computerized billing systems can reduce labor input. In some instances, productivity increases are not well measured in conventional statistics. For example, as hospital lengths of stay have fallen, nursing hours per patient-day have increased (suggesting falling productivity) and nursing hours per admission have fallen (suggesting rising productivity).

Health care professionals increasingly look to broader measures of productivity by redefining the unit of output. Based on the concept that avoiding errors is less expensive than fixing them, the "total quality management" and "continuous quality improvement" movements are focused on enhancing both quality and productivity. From a population perspective, the greatest productivity improvements are likely to come from two areas: increased prevention of illness and reduced use of marginally effective interventions.

Health Care Reforms—Setting the Stage

During the past 20 years, and particularly in the past decade, actions have been taken by the private and public sectors to slow the rate of increase in health care costs. Considerably less has been done to expand health insurance coverage to uninsured persons. Beginning in 1984, however, Congress has mandated incremental changes in Medicaid eligibility. This legislation, culminating with the Omnibus Budget Reconciliation acts of 1989 and 1990, required all states to establish minimum Medicaid income eligibility thresholds at 133% of the poverty level for children younger than 6 and then to phase in coverage, one year at a time, for children ages 18 and younger.[57] Several states have taken limited additional actions in an attempt to increase access for the uninsured.[58] Minnesota recently enacted a major reform proposal to cover uninsured persons,[9] and Vermont passed legislation to set in motion a plan for statewide health care coverage by 1995 (F. Butterfield, "Universal Health Care Plan Is Goal of Law in Vermont," *The New York Times,* May 12, 1992, p A12). Several other states are likely to enact reform proposals in 1992.

The first major federal attempt to contain Medicare costs was the "prospective payment system" for hospitals, passed in 1983 and implemented in the mid-1980s. It had two important effects, one intended and one unintended. As intended, expenditures for Part A (hospital services) slowed notably relative to previous trends.[59] An unintended consequence of the fixed payments, however, was that hospitals were no longer able to cross-subsidize uninsured patients through cost reimbursement with paying patients. This difficulty was exacerbated by the growth of contracting with hospitals by Medicaid programs, particularly Medi-Cal in California,[60] and preferred provider organizations and insurers. The spread of fixed-payment arrangements and contracts by payers unwilling to cross-subsidize led to rapid increases in charges (list prices) paid by the shrinking pool of conventionally insured. This, in turn, has forced up the premiums for small group enrollees—large groups typically have the power to negotiate discounts—and often to a loss of coverage. It has also deprived hospitals of implicit subsidies, which had been used for uncompensated care, adding to hospitals' financial stress and an increasing reliance on public facilities to provide care for uninsured persons.

The second major step by the federal government to curtail Medicare expenditures began in 1984, when Congress

froze physician payments in the Medicare program. Congress followed by reducing payments for overvalued procedures, including many surgical and imaging procedures, limiting charges by physicians above the Medicare allowed charge—the Maximum Actual Allowable Charge program—and establishing the participating physician and provider program. These efforts culminated in 1989 with the enactment of the comprehensive Medicare physician payment reforms, including establishment of the Medicare fee schedule, limits on balance billing, and volume performance standards.[61-63]

Following implementation of the Medicare fee schedule on January 1, 1992, many private payers began to consider applying a fee schedule based on the Medicare relative value scale but with a different conversion factor. How widespread this will become remains to be seen.

In the private sector, actions have been taken by self-insured employers and by commercial and nonprofit insurance companies. In their attempt to control costs, employers have emphasized competitive market-based strategies. These include shifting costs to employees through co-payments, deductibles, and increased premium costs; reducing benefits, sometimes eliminating coverage for dependents; cost management, including utilization review, concurrent review, preadmission or preprocedure certification, and case management; managed competition; and selective contracting.[64] Many of these approaches have affected practicing physicians, adding to what has been called the "hassle factor."[65]

In response, physician groups, including the California Medical Association, have proposed major initiatives to extend health insurance coverage universally. Many of these proposals have called for employer-mandated health insurance and an expansion of Medicaid to cover the unemployed and unemployable younger than 65.[11] The Physicians for a National Health Program proposal suggests a more basic restructuring of the way health care is financed, proposing a single, comprehensive public insurance program.[66]

To help assess the various proposals for health care reform, THE WESTERN JOURNAL OF MEDICINE will carry a series of articles during the coming year. Included will be a review of the major reform alternatives under consideration at the federal level. There will also be a discussion of the interest groups involved and their attempts to influence the outcome of the debate. Articles will follow on structural issues, such as administrative costs and eligibility, that must be dealt with by all the proposals; quality of care, emphasizing the use of tools available to physicians, such as practice guidelines and profiling, that may be useful in providing appropriate, cost-effective care; managed care; data requirements and systems; and finally a review and summary of the prospects for reform. The intent of this series is to help the journal's readers go beyond the rhetoric in which various proposals are couched and to allow a rational assessment of the strengths and weaknesses of various approaches. As this and other articles in the series will show, the problems of the health care system arise from a combination of social, legal, historical, political, and technologic factors. Simple solutions are unlikely to work, but the prospect of important changes has energized the policy debate.

REFERENCES

1. Blendon RJ, Leitman R, Morrison I, Donelan K: Satisfaction with health systems in ten nations. Health Aff (Millwood) 1990; 9:185-192

2. Blendon RJ, Donelan K: The public and the future of US health care system reform, *In* Blendon RJ, Edwards JN (Eds): System in Crisis: The Case for Health Care Reform. Chicago, Ill, Faulkner & Gray, 1991, pp 173-194

3. Faulty Diagnosis: Public Misconception About Health Care Reform. New York, NY, Public Agenda Foundation, April 1992

4. Taylor H, Leitman R: Consumers' satisfaction with their health care, *In* Blendon RJ, Edwards JN (Eds): System in Crisis: The Case for Health Care Reform. Chicago, Ill, Faulkner & Gray, 1991, pp 75-102

5. Pope GC, Schneider JE: Trends in physician income. Health Aff (Millwood) 1992; 11:181-193

6. Kosterlitz J: A sick system. National Journal 1992 Feb 15; 24:376-388

7. Caring for the Uninsured and Underinsured. JAMA 1991; 265:2491-2596

8. Battle of the (Medicaid) Bulge: States Gird for Sizeable Cutbacks, *In* State Health Notes 122. Washington, DC, The George Washington University, Intergovernmental Health Policy Project, Dec 16, 1991

9. Minnesota Health Care Reform Act of 1992, 549 HF §2800

10. Himmelstein DU, Woolhandler S: A national health program for the United States—A physician's proposal. N Engl J Med 1989; 320:102-108

11. Todd JS, Seekins SV, Krichbaum JA, Harvey LK: Health access America—Strengthening the US health care system. JAMA 1991; 265:2503-2506

12. Lee S: Affordable Basic Care: The California Medical Association Plan. Presented at the Institute for Health Policy Studies, University of California, San Francisco, May 1992

13. Scott HD, Shapiro HB: Universal insurance for American health care—A proposal of the American College of Physicians. Ann Intern Med 1992; 117:511-519

14. Critical Issues in American Health Care Delivery and Financing Policy, Advisory Council on Social Security, Washington, DC, December 1991

15. Health Care Spending Control: The Experience of France, Germany, and Japan. US General Accounting Office HRD-92-9, November 1991

16. Steuerle CE: The search for adaptable health policy through finance-based reforms, *In* Helms RB (Ed): American Health Policy: Critical Issues for Reform. Washington, DC, DAEI Press, in press

17. Health Spending: The Growing Threat to the Family Budget. Washington, DC, Families USA Foundation, December 1991

18. Reischauer RD: Congressional Budget Office Testimony before the Committee on Ways and Means, US House of Representatives, October 9, 1991

19. Annual Report to Congress. Washington, DC, Physician Payment Review Commission, 1992

20. Friedman E: The uninsured—From dilemma to crisis. JAMA 1991; 265:2491-2495

21. Himmelstein D, Woolhandler S, Wolfe S: The Vanishing Health Care Safety Net: New Data on Uninsured Americans. Cambridge, Mass, Center for National Health Program Studies, Dec 1991

22. Jones JM: Director's note, *In* Demkovich L (Ed): The States and the Uninsured: Slowly But Surely, Filling the Gaps. Washington, DC, National Health Policy Forum, Washington, DC, October 1990

23. Brown ER, Valdez RB, Morgenstern H, Cumberland W, Wang C, Mann J: Health Insurance Coverage of Californians in 1989. Los Angeles, California Policy Seminar, 1991

24. Weissman JS, Stern R, Fielding SL, Epstein AM: Delayed access to health care: Risk factors, reasons, and consequences. Ann Intern Med 1991; 114:325-331

25. Levit KR, Lazenby HC, Cowan CA, Letsch SW: National health expenditures, 1990. Health Care Financ Rev 1991; 13:29-54

26. Who Will Cure America's Health Care Crisis? Harvard Community Health Plan Annual Report 1991. Brookline, Mass, Harvard Community Health Plan, 1991

27. Arrow KJ: Uncertainty and welfare economics of medical care. Am Econ Rev 1963; 53:941-973

28. Showstack JA, Schroeder SA, Steinberg HR: Evaluating the costs and benefits of a diagnostic technology—The case of upper gastrointestinal endoscopy. Med Care 1981; 19:498-509

29. Showstack JA, Schroeder SA, Matsumoto MF: Changes in the use of medical technologies, 1972-1977—A study of 10 inpatient diagnoses. N Engl J Med 1982; 306:706-712

30. Showstack JA, Stone MH, Schroeder SA: The role of changing clinical practices in the rising costs of hospital care. N Engl J Med 1985; 313:1201-1207

31. Scitovsky AA: The high cost of dying: What do the data show? Milbank Q 1984; 62:591-608

32. Scitovsky AA: Changes in the costs of treatment of selected illnesses, 1971-1981. Med Care 1985; 23:1345-1356

33. Altman SH, Blendon R (Eds): Medical Technology: The Culprit Behind Health Care Costs? Proceedings of the 1977 Sun Valley Forum on National Health. Washington, DC, US Dept of Health, Education and Welfare publication No. (PHS) 79-3216, 1979

34. Foote SB: Managing the Medical Arms Race: Public Policy and Medical Device Innovation. Berkeley, Calif, University of California Press, 1992

35. Woolhandler S, Himmelstein DU: The deteriorating administrative efficiency of the US health care system. N Engl J Med 1991; 324:1253-1258

36. Darman R: Comprehensive Health Reform: Observations About the Problem and Alternative Approaches to Solutions. Office of Management and Budget Testimony before the Committee on Ways and Means, US House of Representatives, October 10, 1991

37. Canadian Health Insurance: Lessons for the United States. US General Accounting Office, HRD-91-90, June 1991

38. Wennberg JE, Gittelsohn AM: Small area variations in health care delivery. Science 1973; 183:1102-1108

39. Wennberg JE, Gittelsohn AM: Variations in medical care among small areas. Sci Am 1982; 246:120-134

40. Wennberg JE, Freeman JL, Shelton RM, Bubolz TA: Hospital use and mortal-

ity among Medicare beneficiaries in Boston and New Haven. N Engl J Med 1989; 321:1168-1173

41. Wennberg J: Dealing with medical practice variations: A proposal for action. Health Aff (Millwood) 1984; 3:6-32

42. Chassin MR, Kosecoff J, Park RE, et al: Does inappropriate use explain geographic variations in the use of health care services? A study of three procedures. JAMA 1987; 258:2533-2537

43. Chassin MR, Kosecoff J, Solomon DH, Brook RH: How coronary angiography is used—Clinical determinants of appropriateness. JAMA 1987; 258:2543-2547

44. Reynolds RA, Rizzo JA, Gonzales ML: The cost of medical professional liability. JAMA 1987; 257:2776-2781

45. Moser J, Musacchio R: The cost of medical professional liability in the 1980's. J Med Pract Manage 1991; 7:6-9

46. Sulvetta MB: Achieving cost control in the hospital outpatient department—1991 Annual Supplement. Health Care Financ Rev 1992 Mar, pp 95-106

47. AHA Hospital Statistics, 1989-1990 ed. Chicago, Ill, American Hospital Association, 1989

48. Fisher ES, Welch HG, Wennberg JE: Prioritizing Oregon's hospital resources. JAMA 1992; 267:1925-1931

49. Bowman MA, Katzoff JM, Garrison LP, Wills J: Estimates of physician requirements for 1990 for the specialties of neurology, anesthesiology, nuclear medicine, pathology, physical medicine and rehabilitation, and radiology—A further application of the GMENAC methodology. JAMA 1983; 250:2623-2627

50. The First Report of the Council, Vol 1. Rockville, Md, Council on Graduate Medical Education, 1988

51. Sixth Report to the President and Congress on the State of Health Personnel in the US. Washington, DC, Bureau of Health Professions, US Dept of Health and Human Services (DHHS) publication No. HRS-P-OD-88-1, 1988

52. Selected Statistics on Health Professional Shortage Areas (as of December 31, 1991): Office of Shortage Designation, Bureau of Health Care Delivery and Assistance, Health Resources and Services Administration, US DHHS, 1992

53. Schwartz WB, Newhouse JP, Bennett BW, Williams AP: The changing geographic distribution of board-certified physicians. N Engl J Med 1980; 303:1032-1038

54. Geyman JP: Family Practice: Foundation of Changing Health Care. Norwalk, Conn, Appleton-Century-Crofts, 1985

55. Grumbach K, Lee PR: How many physicians can we afford? JAMA 1991; 265:2369-2372

56. Schwartz WB, Sloan FA, Mendelson DN: Why there will be little or no physician surplus between now and the year 2000. N Engl J Med 1988; 318:892-897

57. Lee PR, Newacheck PW: Physician reimbursement under Medicaid. Pediatrics 1992; 89:778-780

58. Access to Health Care: State Strategies and Legislation (1991). Washington, DC, Intergovernmental Health Policy Project, George Washington University, 1992

59. Russell LB, Manning CL: The effect of prospective payment on Medicare expenditures. N Engl J Med 1989; 320:439-444

60. Johns L: Selective contracting in California: An update. Inquiry 1989; 26:345-353

61. Annual Report to Congress. Washington, DC, Physician Payment Review Commission, 1989

62. Lee PR, Ginsburg PB: Physician payment reform: An idea whose time has come. JAMA 1988; 260:2441-2443

63. Lee PR, Ginsburg PB: The trials of Medicare physician payment reform. JAMA 1991; 266:1562-1565

64. Anderson R: Employer Initiatives to Better Manage Their Health Benefits Programs. Presented at the Institute for Health Policy Studies, University of California, San Francisco, March 1992

65. The Hassle Factor: America's Health Care System Strangling in Red Tape. Washington, DC, American Society of Internal Medicine, 1990

66. Grumbach K, Bodenheimer T, Himmelstein DU, Woolhandler S: Liberal benefits, conservative spending—The Physicians for a National Health Program proposal. JAMA 1991; 265:2549-2554